Remarks

Claims 1-9, 11, 12 and 14-21 were pending.

Claims 2, 9, 11 and 14 are amended.

Claims 3 and 8 are original.

Claims 1, 4-7, 12, 15-17, 20 and 21are as previously presented.

Claims 18 and 19 are cancelled.

Claims 22 and 23 are new.

The application now contains claims 1-9, 11, 12, 14-17 and 20-23.

In order to focus more clearly on certain aspects of the invention, claims 18 and 19 are cancelled and claims 22 and 23, which are dependent on claims 1 and 3 are added. As claims 22 and 23 do not add to the total number of claims and are more narrow than claims 1 and 3, Applicants believe their insertion after final is proper. Support for the new claims is found in the specification on page 4, lines 7-17.

Claims 2 and 9 are amended to add the limitation that the metal of the thin semi-transparent metal layer is selected from Cr, Mo, W, Al, Cu, Ag, Au and Ni. Support is found on page 2, lines 26-27.

Claim 11 is amended to delete the redundant word "Pigment" from line 2.

Claim 14 is amended to delete the term "metal oxide of" from line 1 and insert in its stead the properly supported term "dielectric material having a". Support is found in claim 3.

No new matter is added.

Claim Rejections

Claims 1-6, 9, 11, 12 and 14-21 are rejected under 35 USC 102(e) as being anticipated by Phillips et.al., US 6,596,529.

Applicants respectfully traverse the rejections.

Applicants, in their previous paper mailed January 26, 2007, presented arguments that the pigments of the instant invention have a transparent or semi-transparent core while the pigments of Phillips have a reflective core.

In the present Action the Examiner responds 1) that there are no limitations in the instant claims relating to a " transparent or semi-transparent core", and 2) that the pigment structure of figure 9 in Phillips does not have a reflective core.

Applicants respectfully respond, as explained in detail below, 1) that it is known to those skilled in the art that SiO_y ($1.1 \leq y \leq 1.8$) is inherently transparent or semi-transparent, and hence so is the core of the instant pigments, (Phillips also discusses the transparency of silicon oxides) and 2) figure 9 in Phillips does not relate to a pigment, but rather depicts a coating structure on a color shifting foil. Therefore, Applicants respectfully maintain that Phillips does not anticipate the instant claims.

Regarding the transparent or semi-transparent nature of core of the instant pigments Applicants respectfully point to Phillips et.al., US 6,596,529 cited by the Examiner, in particular column 6, line 53 to column 7, line 52. The discussion form column 6, line 53 to column 7, line 3 describes how to calculate the optical thickness of a dielectric material with a known refractive index.
The dielectric layers of Phillips are said to "be optically clear, or may be selectively absorbing so as to contribute to the color effect of the pigment". The paragraph beginning on column 7, line 23 lists SiO as an example of a dielectric material having a high refractive index and the beginning on column 7, line 38 lists and SiO_2 as an example of a dielectric material having a low refractive index. Therefore it is known that various silicon oxides are optically clear or only selectively absorbing.

It is apparent that interference colors and color shifting properties are only obtained, if the dielectric layers show a certain degree of transparency. As known to those skilled in the art SiO is a semitransparent material and SiO_2 is a transparent material. The optical properties of SiO_y ($1.1 \leq y \leq 1.8$) range between those of SiO and SiO_2.

In light of the above discussion and the disclosure of Phillips et.al., US 6,596,529, Applicants respectfully maintain that transparency or semi transparency is an inherent characteristic of SiO_y ($1.1 \leq y \leq 1.8$) and that within the physical constraints of the instant pigments, i.e., a particle thickness of 20 nm to 2 μm, the instant core of SiO_y ($1.1 \leq y \leq 1.8$) is also known to those skilled in the art to be inherently transparent or semi-transparent.

Applicants therefore respectfully submit that the limitation "transparent or semi-transparent" is inherent in the claims even though the words transparent or semi-transparent are not used.

Regarding whether the pigments of Phillips contain a reflective core, Applicants respectfully point first to Phillips et.al., US 6,596,529, column 5, lines 41-50, wherein the pigment flakes have a reflector layer which is symmetrically or unsymmetrically coated or a reflective core which is encapsulated. It is true that the reflector layer is not always defined as a "core", however each pigment of Phillips is based on a coated reflector layer. The reflector layer is defined in column 6, lines 40-52 as consisting of a metal or metal alloy because of their high reflectivity, or a non-metallic reflective material may be used.

Applicants respectively submit that a coated reflective layer is feature of US 6,596,529 and such a feature is not part of the instant invention.

Applicants also respectfully point out that Phillips et.al., US 6,596,529, column 4, lines 62-64 defines FIG. 9 as a schematic representation of a coating structure on a color shifting foil as opposed to a pigment particle or flake. Applicants submit that a foil does not meet the size limitations of the instant pigment particles and that figure 9 of Phillips is unrelated to Applicants pigment particles.

In the Action, the Examiner quotes a passage from Phillips that "non-stoichemetric materials are also within the scope of the present invention". Applicants however respectfully counter that the entire paragraph containing this passage does not disclose the SiO_y ($1.1 \leq y \leq 1.8$) of the present invention. Column 7, lines 59-65 , reads:

"For example, silicon monoxide and silicon dioxide have nominal 1:1 and 1:2 silicon:oxygen ratios, respectively, but the actual silicon:oxygen ratio of a particular dielectric coating layer **varies somewhat** from these nominal values. **Such** non-stoichiometric dielectric materials are also within the scope of the present invention."

Applicants question whether the phrase "varies somewhat" as applied to the nominal 1:1 and 1:2 silicon:oxygen ratios would direct one to the SiO_y ($1.1 \leq y \leq 1.8$) of the instant invention. Also, there are many dielectrics in Phillips and there is no teaching of pigment with a core of SiO_y ($1.1 \leq y \leq 1.8$).

Applicants respectfully submit that no anticipation can be said to exist regarding US 6,569,529 in that the instant pigments do not contain a reflective core or layer and the cited art does not disclose pigment with a core containing the inherently transparent or semi-transparent silicon suboxides of the presently amended claims, i.e., SiO_y with $1.1 \leq y \leq 1.8$.

In light of the above discussion Applicants respectfully submit that the rejections of claims 1-6, 9, 11, 12 and 14-21 under 35 USC 102(e) as being anticipated by Phillips et.al., US 6,596,529 are addressed and are overcome and kindly ask that the rejections be withdrawn and claims 1-6, 9, 11, 12, 14-17 and 20-23 be found allowable.

Claim 7 is rejected under 35 USC 103(a) over Phillips et.al., US 6,569,529 in view of Vogt et.al., US 6,238,471. **Claim 8** is rejected under 35 USC 103(a) over Phillips et.al., US 6,569,529 in view of Schmid et.al., US 5,624,468.

Applicants respectfully traverse the rejections.

Applicants respectfully suggest that, as discussed above, the pigments of the instant invention having an inherently transparent or (semi)transparent core of SiO_y with $1.1 \leq y \leq 1.8$ are novel over Phillips et.al., US 6,569,529 and that therefore the combined art in each of the 103(a) rejections fails to meet the limitations of claims.

Applicants kindly ask that the Examiner withdraw the rejections and find claims 7 and 8, along with the previously discussed claims 1-6, 9, 11, 12, 14-17 and 20-23 allowable.

In the event that minor amendments will further prosecution, Applicants request that the Examiner contact the undersigned representative.

Respectfully submitted,

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